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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/707,710	11/07/2000	Jeffrey A. Korn	1029-0100	9810

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EXAMINER

WANG, GEORGE Y

ART UNIT PAPER NUMBER

2882

DATE MAILED: 03/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/707,710

Applicant(s)

KORN ET AL.

Examiner

George Y. Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "fig. 1, ref. 116" and "fig. 1, ref. 118" have both been used to designate the "monitoring diode." A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "fig. 6, ref. 114" and "fig. 6, ref. 144" have both been used to designate the "semiconductor chip." A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "fig. 6, ref. 126" and "fig. 6, ref. 146" have both been used to designate the fiber "endface." A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "fig. 1, ref. 112" has been used to designate both the "thermistor" and "substrate." A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "fig. 6, ref. 144" has been used to designate both the "solder" and "semiconductor chip." A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: fig. 5, ref. 718 (or step 718); fig. 6, ref. 100. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: fig. 1, ref. 12; fig. 2, ref. 122; fig. 3, ref. 130. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the

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description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

8. The drawings filed on November 11, 2000 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftperson's Patent Drawing Review," PTO-948. In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

10. Claims 1 and 3-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Flanders (U.S. Patent No. 6,345,059).

Flanders discloses a semiconductor laser system (fig. 1, ref. 100) that has a package (fig. 1, ref. 110) including a floor and sidewalls, a submount (fig. 1, ref. 105), a semiconductor chip (fig. 7, ref. 422) on the submount, a ferrule in a feedthrough in one of the sidewalls (col. 4, lines 27-33), a polarization-maintaining optical fiber (col. 4, lines 27-33) with a double-angle, wedge-shape endface (fig. 1, ref. 122), and a mounting structure (fig. 1, ref. 210) for securing the endface and having the ability to deform so that axial rotation can be enabled (col. 4, lines 41-44). Flanders also teaches grating (col. 9, lines 23-34) that feeds back and stabilizes the semiconductor chip in view of polarization anisotropy of the chip (col. 7, lines 43-48).

11. Claims 6-8, 10, 12-13, and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Miles (U.S. Patent No. 4,673,244).

Miles discloses a process for manufacturing a semiconductor laser that requires installing the chip (fig. 4, ref. 120) in a package, inserting and securing a polarization-maintaining optical fiber through the ferrule and feedthrough (col. 3, lines 41-43), aligning the endface to the energized semiconductor chip (col. 4, lines 4-6) and detecting the polarization extinction ratio (PER) of light transmitted through the fiber from the semiconductor chip (fig. 3), and then axially rotating the endface of the fiber to maximize the PER through detection on a slow or fast path or axis (fig. 3). Miles also

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teaches a process of securing the fiber on the mounting structure by sealing around the fiber, before or after axial rotation adjustments (col. 5, lines 39-51).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flanders in view of Akasaka et al (U.S. Patent No. 6,292,288, from hereinafter "Akasaka").

Flanders discloses a semiconductor laser system (fig. 1, ref. 100) with a semiconductor chip (fig. 7, ref. 422) that generates light. However, the reference fails to

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specifically disclose the semiconductor chip generating light at a specific range of 1400 to 1500 nm.

Akasaka teaches Raman amplifier that has a semiconductor chip that generates light in the 1400 –1500 nm range (col. 14, lines 17-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify a light generating range of 1400 – 1500 nm for the semiconductor chip since one would be motivated to pump laser under applicable Raman pumping schemes (col. 14, lines 17-26). This not only complies with purposes of the Applicant in keeping with the Raman standards, generating light in this range works to adjust to loss of light due to dispersion (col. 14, lines 17-26).

14. Claims 9, 11, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miles in view of Flanders.

Miles discloses a process for manufacturing a semiconductor laser as recited above. Miles teaches the use of a mounting structure to which the fiber endface is secured and where axial fiber rotation and PER maximization can be performed (fig. 3). However, Miles does not specifically teach a mounting structure that is deformable.

Flanders discloses a deformable mounting structure (col. 4, lines 41-44) that enables active and passive alignment during system manufacture or calibration after an in-service period (col. 4, lines 41-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a deformable mounting structure since one would be

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motivated to further maximize PER during the process of manufacture of the semiconductor laser device (col. 4, lines 41-44). A deforming structure allows fibers that are already aligned and secured to be readjusted so that PER can be enhanced until a desired ratio level is reached (col. 4, lines 41-44). And this is important because, according to Miles, the level of optimally desired PER relates directly to the quality of the laser light that will emerge from the fiber. If the PER is optimized, even when the fiber is shortened, the light that is outputted will be high quality, linearly polarized light that is independent of fiber length and is therefore, highly useful for designed application (col. 5, lines 52-62).

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 703-305-7242. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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gw

March 8, 2002


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